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Conference Abstract

New Mechanisms of Perinatal Hypoxia and Perspectives of Pathogenesis-oriented Treatment

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Abstract

Aim: to study the contribution of structura-functional hemoglobin (Hb) disorders into perinatal hypoxia (PH) pathogenesis and possibility of its indicators using for pharmacotherapy efficiency assessment.90 full-term newborns with PH and 30 healthy ones were examined by clinical methods and Hb spectroscopy. Further children were randomized on 2 groups, received standard therapy and additionally L-carnitine.The indices, indicating Hb affinity to oxygen (1355/1550)/ (1375/1580) and ability to bind them (1355/1550) were less in hypoxia-affected newborns and got reduced at increased severity of PH. The indices of Hb ability to reject ligands (1375/1580) and Hb conformative alterations (1375/1172) were higher in hypoxia-affected neonates and increased simultaneously to PH severity. It means that in severe PH oxygen binding to Hb becomes insufficient. We have established the correlation between Hb conformations and clinical features in newborns with PH. Additional use of L-carnitine promoted restoration of Hb comformative properties and improvement of neurologic status.Our dates confirm the contribution of disorders of Hb structural and functional properties into PH pathogenesis and suggest, that Hb spectroscopy indices could be used as novel criteria of hypoxia severity and pharmaco-therapy efficiency.

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Keywords

Perinatal Hypoxia, Pathogenesis-oriented Treatment, pharmacotherapy, L-carnitine

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The study was approved by a local Ethic Commetee.

Conflicts of interest

No conflicts of interest.